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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/524,610

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Franz Laermer

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EXAMINER

HO, HOANG QUAN TRAN

ART UNIT

PAPER NUMBER

2818

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

12/22/2006

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/524,610	Applicant(s) LAERMER ET AL.	
	Examiner Hoang-Quan Ho	Art Unit 2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-32 is/are pending in the application.
- 4a) Of the above claim(s) 29-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/16/05, 2/2/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election of Invention I, drawn to claims 16 – 28 in the reply filed on October 16, 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 29 – 32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 16, 2006.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statements (IDS) submitted are being considered by the examiner.

Claim Objections

Claim 23 is objected to because of the following informalities: in line 2, "... applied one of to the silicon...".

It is not understood of the words used. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 16 – 18, 20, 23 – 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishimura et al. (U.S. Patent No. 5,604,380), hereinafter as Nishimura.

Regarding claim 16, at least fig. 2d of Nishimura teaches a layer system, comprising:

a silicon layer (ref. no. 1); and

a passivation layer applied at least regionally to a surface of the silicon layer (as seen in fig. 2d), wherein:

the passivation layer includes a first, at least largely, inorganic partial layer (ref. nos. 4 and/or 6) and a second partial layer, and the second partial layer is made of an organic compound (ref. no. 5).

Regarding claim 17, at least fig. 2d of Nishimura teaches the layer system as recited in claim 16, wherein the organic compound contains a halogen (col. 13, lines 46 – 50; examples and tables in the disclosure).

Regarding claim 18, at least fig. 2d of Nishimura teaches the layer system as recited in claim 16, wherein: the organic compound includes a silane corresponding to one of an organic fluorine silane, an organic fluorochlorine silane, and a siloxane (col. 10, lines 55 – 67).

Regarding claim 19, at least fig. 2d of Nishimura teaches the layer system as recited in claim 16, wherein the organic compound has the general formula $R_a-R_b-Si(X)_{3-n}(R_c)_n$, R_a being a perfluorinated polyether or a perfluorinated alkyl group having 1 to 16 carbon atoms, especially 6 to 12 carbon atoms, R_b and R_c being an alkyl group, and X being a halogen, an acetoxy group or an alkoxyl group, and n having a value of 0 to 2 (col. 22, lines 39 – 42).

Regarding claim 20, at least fig. 2d of Nishimura teaches the layer system as recited in claim 16, wherein the first partial layer is at least largely composed of an oxide layer including a silicon oxide (ref. no. 4).

Regarding claim 23, at least fig. 2d of Nishimura teaches the layer system as recited in claim 16, wherein the first partial layer is directly applied one of to the silicon

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layer and on a layer of silicon oxide situated on the silicon layer (as seen in fig. 2d).

Regarding claim 24, at least fig. 2d of Nishimura teaches the layer system as recited in one claim 16, wherein the second partial layer is a self-assembled monolayer (col. 22, lines 39 – 42).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 21 – 22 and 25 – 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura as applied to claim 16 above.

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Regarding claim 21, at least fig. 2d of Nishimura teaches the layer system as recited in claim 16, but Nishimura does not explicitly teaches wherein the first partial layer has a thickness of 1 nm to 100 nm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the device of Nishimura with the first partial layer thickness, in order to achieve desirable thickness.

Regarding claim 22, at least fig. 2d of Nishimura teaches the layer system as recited in claim 16, wherein the first partial layer has a thickness of 1 nm to 20 nm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the device of Nishimura with the first partial layer thickness, in order to achieve desirable thickness.

Regarding claim 25, at least fig. 2d of Nishimura teaches the layer system as recited in claim 16, wherein the second partial layer has a thickness of 0.5 nm to 30 nm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the device of Nishimura with the second partial layer thickness, in order to achieve desirable thickness.

Regarding claim 26, at least fig. 2d of Nishimura teaches the layer system as recited in claim 16, wherein the second partial layer has a thickness of 5 nm to 20 nm. It would have been obvious to one having ordinary skill in the art at the time the invention

was made to provide the device of Nishimura with the second partial layer thickness, in order to achieve desirable thickness.

Regarding claims 21 – 22 and 25 – 26, there is no evidence indicating the thickness of first and second partial layers are critical and it has been held that it is not inventive to discover the optimum or workable range of a result-effective variable within given prior art conditions by routine experimentation. See MPEP § 2144.05.

Note that the specification is believed not containing any disclosure of either the critical nature of the claimed dimensions of any unexpected results arising there from. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Regarding claim 27, at least fig. 2d of Nishimura teaches the layer system as recited in claim 16, wherein the passivation layer protects the silicon layer with respect to an etch attack by a gaseous halogen fluoride including one of ClF_3 and BrF_3 .

Claim 27 is drawn to the process by which the product is made. Such product by process limitation does not structurally distinguish over the reference.

Note that a “product by process” claim is directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re*

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Avery, 186 USPQ 161; *In re Marosi et al.*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear.

Regarding claim 28, at least fig. 2d of Nishimura teaches the layer system as recited in claim 16, wherein the passivation layer is free of micro-scale or nano-scale channels which are permeable for a gas including one of ClF_3 , BrF_3 and a vapor.

Claim 28 is drawn to the process by which the product is made. Such product by process limitation does not structurally distinguish over the reference.

Note that a "product by process" claim is directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Marosi et al.*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims

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or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang-Quan Ho whose telephone number is (571) 272-8711. The examiner can normally be reached on Monday - Friday, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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HQH

December 19, 2006

Andy H. Hwang
Andy H. Hwang
Primary Examiner